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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/575,489	04/12/2006	Hiroshi Fukushima	P29715	1539
7055 7590 10/12/2007 GREENBLUM & BERNSTEIN, P.L.C. 1950 ROLAND CLARKE PLACE RESTON, VA 20191			EXAMINER CONLEY, ROBERT T	
			ART UNIT	PAPER NUMBER
			2891	
			NOTIFICATION DATE	DELIVERY MODE
			10/12/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/575,489

Applicant(s)

FUKSHIMA ET AL.

Examiner

Robert Conley

Art Unit

2891

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 April 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 7/12/2006.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in **Graham v. John Deere Co., 383 U.S. 1, 148 USPQ 459 (1966)**, that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows: **(See MPEP Ch. 2141)**

- a. Determining the scope and contents of the prior art;
 - b. Ascertaining the differences between the prior art and the claims in issue;
 - c. Resolving the level of ordinary skill in the pertinent art; and
 - d. Evaluating evidence of secondary considerations for indicating obviousness or nonobviousness.
2. Claims 1-2 are rejected under 35 U.S.C. 102(e) as being anticipated by Okazaki '862, in view of Poicus et al., '613.
 3. Regarding Claim 1, Okazaki discloses, "forming a transfer layer on at least a part of the transparent crystal substrate or the light-emitting layer (Col. 5, lines 31-35), which transfer layer is softened or set upon supplying an energy thereto (Col. 5, lines 43-46); forming a minute unevenness structure for preventing multiple reflection based on the minute unevenness structure transferred to the transfer layer," (Col. 5, lines 47-52).
 4. Regarding Claim 2, Okazaki discloses, "a step of separating the transparent crystal substrate from the light-emitting layer after a substrate bearing layer is formed on

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a surface of the light-emitting layer where electrodes are to be formed" (Col. 13 lines 1-3).

5. Okazaki does not explicitly recite, "pressing a mold formed with a minute unevenness structure (stamping block 70) against the transfer layer to transfer the minute unevenness structure to an outer surface of the transfer layer" (Col. 5, lines 47-51)."

6. Poicus teaches, "pressing a mold formed with a minute unevenness structure (stamping block 70) against the transfer layer to transfer the minute unevenness structure to an outer surface of the transfer layer" (Col. 8, lines 10-51), for the benefit of having greater flexibility in designing the contours of the unevenness structure to include Fresnel lenses or holographic diffusers (Col. 3, lines 2-13).

7. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined the process of Okazaki with the mold of Poicus for the benefit of having had greater flexibility in designing the contours of the unevenness structure to include Fresnel lenses or holographic diffusers.

8. Claims 3 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okazaki in view of Poicus further in view of Babich '322.

9. Okazaki/Poicus discloses the claimed invention except for, "forming the transfer layer includes a step of applying a silicon organic solvent to at least the part of the transparent crystal substrate or the light-emitting layer to form the transfer layer." It would have been obvious to one of ordinary skill at the time the invention was made to use a silicon organic solvent as the transfer layer, since it has been held to be within the

general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice, *In re Leshin*, 125 USPQ 416.

Okazaki/Poicus does not explicitly recite, "forming the minute unevenness structure for preventing the multiple reflection includes a step of dry etching the transfer layer with a chlorine gas using the transfer layer as a resist mask to form the minute unevenness structure for preventing the multiple reflection in the transparent crystal substrate or the light-emitting layer."

Babich teaches, "forming the minute unevenness structure for preventing the multiple reflection includes a step of dry etching the transfer layer with a chlorine gas using the transfer layer as a resist mask to form the minute unevenness structure for preventing the multiple reflection in the transparent crystal substrate or the light-emitting layer (Paragraphs [0030] to [0033]). Also, Babich teaches, "It is well known in the art to use silicon organic solvent materials, (TEOS) as a hard mask for dry etching." (Paragraph [0032], lines 13-20).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the hard mask of Babich to the minute unevenness structure of Okazaki/Poicus for the benefit of etching a semiconductor material under extreme conditions.

10. Claims 8-9 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okazaki in view of Poicus further in view of Holman '938.

11. Regarding Claim 8, Okazaki/Poicus remains as applied above. Okazaki/Poicus does not explicitly recite, "unevenness structure larger than the minute unevenness structure on the minute unevenness structure of the light-emitting layer."

Holman teaches, "unevenness structure larger than the minute unevenness structure on the minute unevenness structure of the light-emitting layer" for the benefit of well defined and controllable illumination (Paragraph [0038], and Fig. 3).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the unevenness structures of Holman with the method of Okazaki/Poicus for the benefit of well defined and controllable illumination.

12. Regarding Claim 9, the combination of Okazaki/Poicus and Holman remains as applied above. Poicus discloses the unevenness structure has the shape of a prism or a microlens (Fig. 9).

13. Regarding Claim 12, Okazaki/Poicus remains as applied above. Okazaki/Poicus does not explicitly recite, "unevenness structure larger than the minute unevenness structure on the minute unevenness structure of the light-emitting layer."

Holman teaches, "unevenness structure larger than the minute unevenness structure on the minute unevenness structure of the light-emitting layer" for the benefit of well defined and controllable illumination (Paragraphs [0038] and [0039], and Fig. 3).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the unevenness structures of Holman with the method of Okazaki/Poicus for the benefit of well defined and controllable illumination.

14. Claims 4-7, 10-11 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okazaki in view of Poicus.

15. Regarding Claim 4. Okazaki/Poicus discloses the claimed invention except for, "a mold having an upper flat portion to be located near the bottoms of the minute unevenness structure for preventing the multiple reflection and a lower flat portion to be located at a position lowered from the upper flat portion by about the thickness of the upper semiconductor layer of the light-emitting layer against the transfer layer to transfer an upper flat portion and a lower flat portion together with the minute unevenness structure to the transfer layer" which has no patentable weight because the recited structural limitation must affect the method in a manipulative sense, and not amount to the mere claiming of a use of a particular structure. *Ex parte Pfeiffer*, 1962 C.D. 408 (1961).

Poicus discloses the claimed invention except for, "forming electrode-forming portions by etching the upper and lower semiconductor layers of the light-emitting layer when dry etching is carried using the transfer layer as a resist mask." It would have been obvious to one of ordinary skill in the art at the time the invention was made to place electrodes at either end of the active layer, since it has been held that rearranging parts of an invention involves only routine skill in the art. *In re Japikse*, 86 USPQ 70.

16. Regarding Claims 5 and 10, Okazaki/Poicus discloses the claimed invention except for, "adjusting a selection ratio of the etching speed of the light-emitting layer to that of the resist from twofold to fourfold". It would have been obvious to one of ordinary skill in the art at the time the invention was made to adjust a selection ratio of the

etching speed of the light-emitting layer to that of the resist from twofold to fourfold, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or working ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

17. Regarding Claims 6 and 14, Okazaki/Poicus discloses the claimed invention except for "applying the silicon organic solvent by potting or spray coating". It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the silicon organic solvent by potting or spray coating, since it was known in the art that TEOS may be applied by potting or spray coating.

18. Regarding Claims 7 and 11, Okazaki/Poicus discloses the claimed invention except for "a pressing pressure of the mold is 5 MPa or higher and 150 MPa or lower". It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a pressing pressure of 5 MPa or higher and 150 MPa or lower, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or working ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

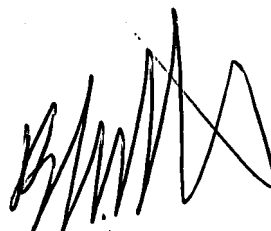
Conclusion

23. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert Conley whose telephone number is (571) 270-1852. The examiner can normally be reached on Monday through Friday 0730 to 1700 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Baumeister can be reached on (571) 272-1722. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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